EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE

Response to Amendment

1. This action is responsive to applicant's amendment and remarks received on 10/23/09. Claims 1, 3-6, 10-15, 19-20, 24-27 are currently pending.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Anthony G. Craig (Reg #: 50, 342) on 10/29/09.

The application has been amended as follows:

1. (Currently Amended): A computer implemented method implemented within a computer system including memory and CPU for generating a highly condensed visual summary of video regions, comprising:

~~utilizing the memory and CPU for determining a dominant group in each of a plurality of video segments;~~

~~utilizing the memory and CPU for determining a key frame in each of the video~~

~~segments;~~

utilizing the memory and CPU for defining a germ in each of a plurality of images, the germ containing a region of interest ~~associated with each dominant group in each of the video segments, wherein the video segment less the germ defines a support in each of the video segments~~;

utilizing the memory and CPU for defining a support in each of the video segments, wherein the support is the video segment less the germ;

utilizing the memory and CPU for separating the germ from the video segments;

utilizing the memory and CPU for laying out the germs on a canvas, wherein there is no more than one germ for every video segment, wherein the canvas is partitioned into disjoint areas corresponding to the shape of the germs, wherein the shape of the ~~germs~~ disjoint areas is defined by a Voronoi algorithm; and

utilizing the memory and CPU for filling in the space of the canvas ~~inside each disjoint area not occupied by its corresponding germ~~ between the disjoint areas corresponding to the shape of the germs, wherein filling in the space of the canvas between the germs includes laying out one or more portions of the supports by assigning a pixel value of a point in the space from the same value as the corresponding pixel of the germ's support when this point is nearest the germ, and only when the germ's support does not encompass the point assigning pixel values of a support of a neighboring germ based on a distance from the point to the neighboring germ, wherein a point in the space is only assigned a background value if no support includes ~~the germ's support does not include~~ the point, ~~wherein the canvas generated is~~ to generate a highly condensed visual summary of the plurality of video segments.

2. (Cancelled)

3. (Currently Amended): The method of claim 1 wherein defining a germ includes: defining a two dimensional shape that encompasses the projection of a ~~the~~ dominant group onto the key frame.

4. (Original): The method of claim 3 wherein the two dimensional shape is a rectangle.

5. (Original): The method of claim 3 wherein laying out the germs includes: determining a scale factor to be applied to every germ such that the germs are scaled to the maximum size that fits into the canvas.

6. (Original): The method of claim 3 wherein laying out the germs includes: placing the germs in rows, wherein each row has a height according to the longest germ in the particular row.

7-9. (Cancelled)

10. (Currently Amended): A computer implemented method implemented within a computer system including memory and CPU for generating a highly condensed visual summary of video regions, comprising:

utilizing the memory and CPU for determining a germ in each of a plurality of images, the germ containing a region of interest;

utilizing the memory and CPU for defining~~, wherein the video region less the germ defines~~ a support in each of the video segments ~~regions~~ wherein the support is the video segment less the germ;

utilizing the memory and CPU for separating the germ from the video segments;

utilizing the memory and CPU for laying out the germs on a canvas, wherein the germs

are laid out in irregular two dimensional shapes on the canvas;

utilizing the memory and CPU for defining a space between the germs; and

utilizing the memory and CPU for filling in the space of the canvas between the irregular two dimensional shape germs ~~by laying out one or more parts of the support~~, wherein filling in the space of the canvas between the irregular two dimensional shape germs includes laying out one or more portions of the supports by assigning the same value as the corresponding pixel of the germ's support when this point is nearest the germ, and only when the germ's support does not encompass the point assigning a pixel value of a point in the space from pixel values of a support of a neighboring germ based on a distance from the point to the neighboring germ, wherein a point between the irregular two dimensional shape germs is assigned an average value of nearby ~~pixels~~ point values only if no support includes the point, to generate ~~wherein the canvas generated is~~ a highly condensed visual summary of the plurality of video segments ~~regions~~.

11. (Previously Presented): The method of claim 10 wherein determining a germ includes: detecting a face in each of the plurality of images.

12. (Previously Presented): The method of claim 10 wherein determining a germ includes: receiving user input, the user input associated with a part of an image.

13. (Previously Presented): The method of claim 10 wherein determining a germ includes: using an algorithm to determine the regions of interest of an image based on one or more methods selected from the group consisting of a face-detection algorithm, an object detection algorithms and user input.

14. (Previously Presented): The method of claim 10 wherein laying out the germs includes: determining a scale factor to be applied to every germ such that the germs are scaled to the maximum size that fits into the canvas.

15. (Previously Presented): The method of claim 10 wherein laying out the germs includes: placing the germs in rows, wherein each row has a height according to the longest germ in the particular row.

16-18. (Cancelled)

19. (Previously Presented): The method of claim 1 wherein defining a germ includes: detecting a face in each of the plurality of images.

20. (Previously Presented): The method of claim 1 wherein defining a germ includes: using an algorithm to determine a region of interest of an image.

21 - 23. (Cancelled)

24. (Previously Presented): A computer implemented method implemented within a computer system including memory and CPU for generating a highly condensed visual summary of video regions, comprising:

utilizing the memory and CPU for determining a dominant group in each of a plurality of video segments, wherein the dominant group includes a face;

utilizing the memory and CPU for determining a key frame in each of the video segments;

utilizing the memory and CPU for defining a germ associated with each dominant group in each of the video segments, wherein the germ is the x-y projection of the dominant group including the face onto the keyframe;

utilizing the memory and CPU for separating the germ from the video segments;

utilizing the memory and CPU for laying out the germs on a canvas, wherein the canvas is partitioned into disjoint areas corresponding to the germs, wherein the shape of the disjoint areas is defined using one or more algorithm selected from the group consisting of the distances between the germs, the distance between the face and the germ and the distance between two or more faces and the germ; and

utilizing the memory and CPU for filling in the space of the canvas between the disjoint areas corresponding to the germs, wherein filling in the space of the canvas between the germs includes laying out one or more portions of the supports by assigning a pixel value of a point in the space from the same value as the corresponding pixel of the germ's support when this point is nearest the germ, and only when the germ's support does not encompass the point assigning pixel values of a support of a neighboring germ based on a distance from the point to the neighboring germ, wherein a point between the irregular two dimensional shape germs is assigned an average value of nearby point values only if no support includes the point, wherein the canvas generated is a highly condensed visual summary of the plurality of video segments.

25. (Previously Presented): A computer implemented method implemented within a computer system including memory and CPU for generating a highly condensed visual summary of video regions, comprising:

utilizing the memory and CPU for determining a germ in each of a plurality of images, the germ containing a region of interest;

utilizing the memory and CPU for defining a support in each of the video segments, wherein the support is the video segment less the germ;

utilizing the memory and CPU for separating the germ from the video segments;

utilizing the memory and CPU for laying out the germs on a canvas, wherein the canvas is partitioned into disjoint areas corresponding to the shape of the germs;

utilizing the memory and CPU for computing boundary curves between the germs, wherein the boundary curves between the germs are defined using one or more algorithm selected from the group consisting of the distance between a point and the closest border of the germ, the distance between a point and the center of a germ and the distance between a point and the size of the germ;

utilizing the memory and CPU for defining a space between the boundary curves; and

utilizing the memory and CPU for filling in the space of the canvas, wherein filling in the space of the canvas includes laying out one or more portions of the supports by assigning a pixel value of a point in the space from the same value as the corresponding pixel of the germ's support when this point is nearest the germ, and only when the germ's support does not encompass the point assigning pixel values of a support of a neighboring germ based on a distance from the point to the neighboring germ, wherein a point between the boundary curves is assigned an average value of nearby point values only if no support includes the point, to generate a highly condensed visual summary of the plurality of video segments.

26. (Previously Presented): The method of claim 3 wherein the two dimensional shape is irregular.

27. (Previously Presented): The computer implemented method of claim 25 wherein the germs are laid out in irregular two dimensional shapes on the canvas.

Allowable Subject Matter

3. Claims 1, 3-6, 10-15, 19-20, 24-27 (to be re-numbered as 1-17) are allowed.

4. The following is an examiner's statement of reasons for allowance:

Regarding claim 1, the most relevant prior art of record, Bae reference, teaches utilizing the memory and CPU for defining a germ in each of a plurality of images, the germ containing a region of interest; utilizing the memory and CPU for defining a support in each of the video segments, wherein the support is the video segment less the germ; utilizing the memory and CPU for separating the germ from the video segments (see Final Rejection on 8/24/09).

Applicant's claimed invention distinguishes over the Bae reference by utilizing the memory and CPU for laying out the germs on a canvas, wherein there is no more than one germ for every video segment, wherein the canvas is partitioned into disjoint areas corresponding to the shape of the germs, wherein the shape of the disjoint areas is defined by a Voronoi algorithm; and utilizing the memory and CPU for filling in the space of the canvas between the disjoint areas corresponding to the shape of the germs, wherein filling in the space of the canvas between the germs includes laying out one or more portions of the supports by assigning a pixel value of a point in the space from the same value as the corresponding pixel of the germ's support when this point is nearest the germ, and only when the germ's support does not encompass the point assigning pixel values of a support of a neighboring germ based on a distance from the point to the neighboring germ, wherein a point in the space is only assigned a

background value if no support includes the point, to generate a highly condensed visual summary of the plurality of video segments.

Regarding claim 10, the most relevant prior art of record, Yu reference, teaches utilizing the memory and CPU for determining a germ in each of a plurality of images, the germ containing a region of interest; utilizing the memory and CPU for defining, a support in each of the video segments wherein the support is the video segment less the germ;

utilizing the memory and CPU for separating the germ from the video segments; utilizing the memory and CPU for laying out the germs on a canvas, wherein the germs are laid out in irregular two dimensional shapes on the canvas; utilizing the memory and CPU for defining a space between the germs (see Final Rejection on 8/24/09).

Applicant's claimed invention distinguishes over the Bae reference by utilizing the memory and CPU for filling in the space of the canvas between the irregular

two dimensional shape germs, wherein filling in the space of the canvas between the irregular two dimensional shape germs includes laying out one or more portions of the supports by assigning the same value as the corresponding pixel of the germ's support when this point is nearest the germ, and only when the germ's support does not encompass the point assigning a pixel value of a point in the space from pixel values of a support of a neighboring germ based on a distance from the point to the neighboring germ, wherein a point between the irregular two dimensional shape germs is assigned an average value of nearby point values only if no support includes the point, to generate a highly condensed visual summary of the plurality of video segments.

Regarding claim 24, the most relevant prior art of record, Yu with Li combination, teaches utilizing the memory and CPU for determining a dominant group in each of a plurality of video segments, wherein the dominant group includes a face; utilizing the memory and CPU for determining a key frame in each of the video segments; utilizing the memory and CPU for defining a germ associated with each dominant group in each of the video segments, wherein the germ is the x-y projection of the dominant group including the face onto the keyframe; utilizing the memory and CPU for separating the germ from the video segments (see Final Rejection on 8/24/09).

Applicant's claimed invention distinguishes over the Yu with Li combination by utilizing the memory and CPU for laying out the germs on a canvas, wherein the canvas is partitioned into disjoint areas corresponding to the germs, wherein the shape of the disjoint areas is defined using one or more algorithm selected from the group consisting of the distances between the germs, the distance between the face and the germ and the distance between two or more faces and the germ; and utilizing the memory and CPU for filling in the space of the canvas between the disjoint areas corresponding to the germs, wherein filling in the space of the canvas between the germs includes laying out one or more portions of the supports by assigning a pixel value of a point in the space from the same value as the corresponding pixel of the germ's support when this point is nearest the germ, and only when the germ's support does not encompass the point assigning pixel values of a support of a neighboring germ based on a distance from the point to the neighboring germ, wherein a point between the irregular two dimensional shape germs is assigned an average value of nearby point values only if no support

includes the point, wherein the canvas generated is a highly condensed visual summary of the plurality of video segments.

Regarding claim 25, the most relevant prior art of record, Bae with Leow combination, teaches utilizing the memory and CPU for determining a germ in each of a plurality of images, the germ containing a region of interest; utilizing the memory and CPU for defining a support in each of the video segments, wherein the support is the video segment less the germ; utilizing the memory and CPU for separating the germ from the video segments; utilizing the memory and CPU for laying out the germs on a canvas, wherein the canvas is partitioned into disjoint areas corresponding to the shape of the germs (see Final Rejection on 8/24/09).

Applicant's claimed invention distinguishes over the Bae with Leow combination by utilizing the memory and CPU for computing boundary curves between the germs, wherein the boundary curves between the germs are defined using one or more algorithm selected from the group consisting of the distance between a point and the closest border of the germ, the distance between a point and the center of a germ and the distance between a point and the size of the germ; utilizing the memory and CPU for defining a space between the boundary curves; and utilizing the memory and CPU for filling in the space of the canvas, wherein filling in the space of the canvas includes laying out one or more portions of the supports by assigning a pixel value of a point in the space from the same value as the corresponding pixel of the germ's support when this point is nearest the germ, and only when the germ's support does not encompass the point assigning pixel values of a support of a neighboring germ based on a distance from the point to the neighboring germ, wherein a point between the boundary curves is

assigned an average value of nearby point values only if no support includes the point, to generate a highly condensed visual summary of the plurality of video segments.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to EDWARD PARK whose telephone number is (571)270-1576. The examiner can normally be reached on M-F 10:30 - 20:00, (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on (571) 272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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